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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,845	09/01/2000	Jifa Hao	87552.99R272/SE-1528PD	6844

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HISCOCK & BARCLAY, LLP  
2000 HSBC PLAZA  
ROCHESTER, NY 14604-2404

EXAMINER
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NADAV, ORI

ART UNIT	PAPER NUMBER
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2811

MAIL DATE	DELIVERY MODE
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01/24/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Advisory Action**  
**Before the Filing of an Appeal Brief**

Application No.

09/654,845

Applicant(s)

HAO ET AL.

Examiner

Ori Nadav

Art Unit

2811

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 03 January 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: \_\_\_\_\_.

Claim(s) rejected: 1-8, 10-15, 17 and 35-41.


Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See attachment.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
13. ☐ Other: \_\_\_\_\_.



ORI NADAV  
PRIMARY EXAMINER

**DETAILED ACTION*****Response to Arguments***

Applicant argues that there is support for a device which meets both limitations of claim 35 (a third boundary between the N+ doped region and the P-well or the N-doped layer) and the limitations of the N+ doped region is separated from the P-doped well by the N-doped layer, the N+ doped region is within the P-doped well, and the N+ doped region abuts the P+ doped region, as recited in claims 39-41, because there is no requirement for the third boundary to be between the N+ doped region and both the P-well and the N-doped layer

The examiner agrees that there is no requirement for the third boundary to be between the N+ doped region and both the P-well and the N-doped layer. However, in this case, Claim 35 recites a third boundary between the N+ doped region and the P-well or the N-doped layer. Both possibilities must be met (not in one device). When dependent claims 39-41 are introduced, both conditions cannot be met since each of the dependent claims recites specific limitation, which is contradictory to the requirements, as recited in claim 35.

For example, claim 39 recites a third boundary between the N+ doped region and the P-well or the N-doped layer (as recited in claim 35), wherein the N+ doped region is separated from the P-doped well by the N-doped layer (as recited in claim 39). An artisan must be able to form two devices by using this limitation: 1. a device which

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comprises a third boundary between the N+ doped region and the P-well, wherein the N+ doped region is separated from the P-doped well by the N-doped layer. 2. a device which comprises a third boundary between the N+ doped region and the N-doped layer, wherein the N+ doped region is separated from the P-doped well by the N-doped layer.

There is no support for a device which comprises a third boundary between the N+ doped region and the P-well, wherein the N+ doped region is separated from the P-doped well by the N-doped layer.

Applicant argues that Choy does not teach an N+ doped region laterally spaced from the P+ doped region and the P doped well.

Figure 4 of Choy depicts four N+ doped regions 9. The N+ doped region 9 located on the right side of the figure is clearly away from the P doped well located on the left side of the figure. Therefore, Choy teaches an N+ doped region laterally spaced from the P+ doped region and the P doped well, as claimed.

Applicant argues that Choy does not teach an N+ doped region laterally spaced from the P doped well, because all the N+ doped regions 9 of Choy are disposed within the P doped wells.

Choy teaches at least four N+ doped regions 9 disposed within four P doped wells, respectively. The first N+ doped region 9, for example, is not formed within the second P doped well. Therefore, the first N+ doped region 9 of Choy is laterally spaced from the second P doped well, as claimed.

Applicant argues that Shlangenotto does not teach recombination centers disposed substantially in the N- doped layer and P- doped well, because Shlangenotto does not limit the location of the recombination centers, and claim 1 does not recite forming recombination centers throughout the diode.

The broad recitation of claim 1 does not preclude the recombination centers from being present in areas other than the N- doped layer and P- doped well. Therefore, since Shlangenotto teaches forming recombination centers throughout the diode, these recombination centers would be also present in the N- doped layer and P- doped well, as claimed.

Applicant argues that Temple does not teach a device having a P+ doped region that is vertically thinner than the P- doped well and the N+ doped region, because figure 8 shows the P+ region as vertically thicker than the N+ region.

Figure 8 depicts the P+ region as vertically thinner than the N+ region, because the vertical distance between the bottom surface of the P+ region and the bottom surface of the N+ region is less than the vertical distance between the top surface of the P+ region and the top surface of the N+ region. In any event, figure 8 depicts the vertical dimensions of the P+ region at its outmost right edge as being vertically thinner than the N+ region.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ori Nadav whose telephone number is 571-272-1660. The examiner can normally be reached between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



O.N.  
1/22/07

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